

DIEBACK IN *SPARTINA ALTERNIFLORA* MARSHES ALONG THE SOUTHWEST LOUISIANA COAST

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Marsh dieback is perceived to be a new and emerging threat to coastal Louisiana. While the factors producing this dieback are still mostly unknown, such a phenomenon is expected to lead to a greater loss of important salt marsh habitat, as well as subsidence and loss of land in the coastal zone. Most of the focus has been on the dieback events in the Barataria and Terrebonne basins, due to the large extent of this phenomenon in these areas. However, dieback events are occurring also along the coast in southwest Louisiana, in the Chenier Plain. Dieback areas have been found in the Sabine National Wildlife Refuge and other proximal areas. In these areas, *Spartina alterniflora* plants (and sometimes *S. patens*) have browned quickly over the summer. The plants in the affected areas appeared green and healthy in mid to late May 2000, but they were dead or dying by late July 2000. The size of the affected area has increased since the summer.

Up to now, we have measured the density of living and dead shoots in the dieback and healthy zones of an 18 year old restored site in Sabine NWR. The number of living, green shoots in the dieback zone in September 2000 was significantly less than in the healthy zone (0 and 150 shoots / m², respectively). In addition, differences in hydrology and soil chemistry of these two zones are being determined. The dead zone has slightly lower elevation and is usually flooded while the still-healthy zone may not have standing water for prolonged periods. Lastly, a preliminary transplant experiment was established in late September 2000, using healthy clones from another nearby restored area in Sabine NWR. All of the restored sites were constructed using dredge material from the neighboring Calcasieu Ship Channel. As of early December 2000, most of the aboveground plant material of the transplanted *S. alterniflora* plugs had turned brown, due to transplant shock, but new green shoots have emerged from 40% of the transplanted plants.

Emergent new growth from the native *S. alterniflora* plants in the dieback zone is very rare.

The transplant experiment is designed to determine the feasibility of restoring dieback marshes, if such action is deemed necessary in the future. We envision enlarging the transplant experiment in the future, including many more clones of *S. alterniflora* from around Louisiana, so to determine possible viable clones for future restoration actions.